

PATENT ABSTRACTS OF JAPAN

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(22)Date of filing : 04.01.1993 (72)Inventor : KITSUTA YASUO

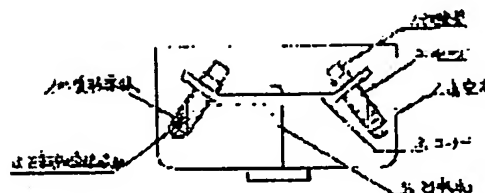
(54) CENTRIFUGAL EVAPORATOR

(57)Abstract:

PURPOSE: To drastically enlarge the area which can be evaporated of a materials solvent medium inside a test tube and to accelerate evaporation speed by speeding up the evaporation speed by that amount if the surface area of the materials solvent medium is enlarged when atmospheric pressure and temperature are the same and by changing the rotation system in a centrifugal evaporator.

CONSTITUTION: A rotar 3 fitted to an eccentricity shaft 8 can be rotated freely by a bearing 7 within a vacuum bath 6. When the rotary shaft 4 starts to be rotated, the eccentricity shaft performs circular motion and the rotar also performs circular motion but it is free for rotation by a bearing and does not rotate since it is fixed by a spring

9. On the other hand, the materials solvent medium rotates along the inner periphery of a test tube and always wets the inner wall surface of the test tube. Therefore, the surface which can be evaporated of the materials solvent medium ranges the entire region of the inner periphery of the test pipe.



LEGAL STATUS

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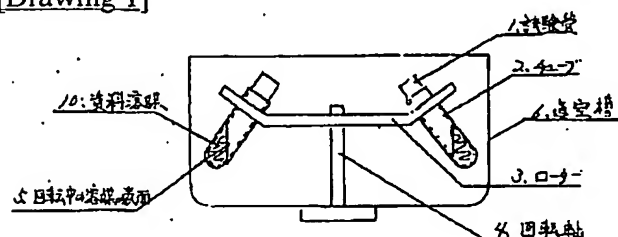
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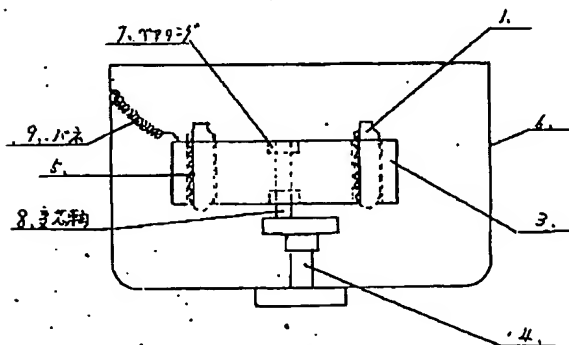
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DRAWINGS

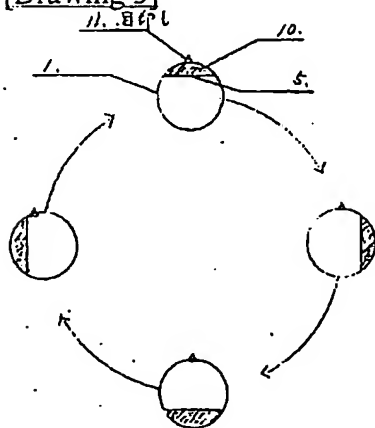
[Drawing 1]



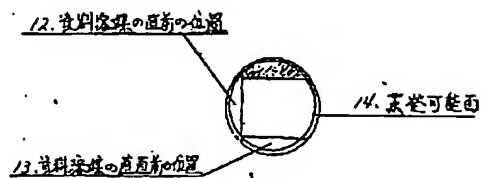
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[the field of the invention on industry] -- this invention relates to a centrifugal evaporator.

[0002]

Pressing down foaming of a data solvent and projection according to a centrifugal force by rotating a test tube, a [Prior-art] centrifugal evaporator discharges the air in a tub with a vacuum pump, and performs concentration of data, and desiccation. Conventionally, the revolution of a test tube was a thing which the revolving shaft of the center of a tub is equipped [thing] with a rotor, and you equip [thing] with a test tube the hole dug on the periphery of a rotor with a certain include angle (generally 15 degrees - 35 degrees) to the revolving shaft, and makes it rotate like drawing 1 . In this case, a test tube is the rotary system which is equivalent to the bone of the rotating open umbrella to a revolving shaft, and the front face of the data solvent under revolution becomes vertical like drawing 15 .

[0003]

The surface area of the solvent in which the evaporation in [the technical problem which invention makes solution *****], therefore the test tube under revolution is possible became what was restricted very much, and had become a failure for raising a vapor rate.

[0004]

The centrifugal evaporator characterized by inserting in a rotor (3) where a test tube (1) is stood vertically, and carrying out the circular motion for a rotor by the deflection axis (8) within the [The means for solving a technical problem] vacuum tub (6).

[0005]

Where the medial axis of a [operation] test tube is stood vertically, by carrying out the circular motion by the deflection axis, like drawing 3 , a data solvent accompanies a test tube wall and causes the circular motion. In this case, although the data solvent inclines toward one side of the wall of a test tube like drawing 4 if a certain instant is regarded as a quiescent state, just before that, the data solvent wet the location of drawing 4 -12, and the location of drawing 4 -13 is wet for ** before ** and one more. Therefore, the field of a data solvent which can be evaporated will have attained to the wall perimeter of a test tube, and the area which can be evaporated is expanded substantially.

[0006]

[Example] -- the example of this invention is explained hereafter. Since the vapor rate of a data solvent is determined by an atmospheric pressure, temperature, and surface area, as for the surface area of a data solvent, it is desirable that it is size more. It enables it to rotate free the rotor (3) with which the deflection axis (8) was equipped within the vacuum tub (6) by the bearing (7) so that it may see to drawing 2 . If a revolving shaft (4) begins a revolution, a deflection axis will carry out the circular motion, a rotor will also carry out the circular motion, but since it is free and the bearing is fixed with the spring (9) to the revolution, a test tube (1) does not rotate. If this is seen by drawing 3 , although there is always a mark (11) put on the test tube (1) in the fixed direction (drawing upper part) and it carries out the circular motion, it will not rotate. On the other hand, the data solvent (10) accompanied

the inner circumference of a test tube, and was rotated, and the internal surface of a test tube is always wet. Therefore, it goes over the area of a data solvent which can be evaporated throughout the inner circumference of a test tube so that it may see to drawing 4 -14. Moreover, a solvent becomes shallow, and since the force in which the data solvent under reduced pressure projects is proportional to the depth of a solvent, as compared with the conventional rotary system, a centrifugal force may be small, and only the part to which surface area was expanded does not project, even if a rotational frequency is low. [0007]

[Effectiveness] atmospheric-pressure and temperature ** can bring the part vapor rate forward, if the surface area of a data solvent is expanded when the same. By changing a rotary system, the area of the data solvent in a test tube which can be evaporated can be expanded substantially, and a vapor rate is promoted.

[Translation done.]